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THE opening address to the Royal Institute of British Architects, by its president, Mr. Barry, which we find reported in the English building journals, seems to indicate that the Institute has made substantial gains during the past years. It had seemed for some time to be settling down into a condition of dignified inactivity, and to be ready to leave active work to its younger fellow, the Architectural Association, when a year or two ago it was decided that something ought to be done to increase the enterprise of the older society and give it an influence commensurate with its dignity. The appointment of a committee last year to suggest alterations in its constitution resulted in several changes; among them the remodelling of the Council, the governing body of the Institute, making it a more permanent body of the older and abler, or at least more influential men, and the establishment of a new order of members, called Honorary Associates, who would be, it was hoped, outsiders of position and influence, and were expected to be a connecting medium to extend the influence of the Institute among the public. The election of Mr. Barry as president, whose energy and practical sagacity are well known, was relied on to second these efforts. The result seems to justify the expectation. The membership of the Institute, six hundred and thirty-five, is larger than ever before. The establishing of Honorary Associates, which was thought to be an uncertain experiment, has been very successful; and the president named a list of upwards of forty gentlemen, most of them distinguished in art or affairs, who desired to be enrolled among them. In regard to them he said,—and the remarks are suggestive for others than the members of the Royal Institute,—"Through it [the new membership] our artistic brethren in the other walks of fine arts, of painting and sculpture, our amateur architects, . . . our church dignitaries, . . . our civil engineers, . . . our members of each House of Parliament, who have often to decide questions relating to our art and practice, . . . may, and I hope will, by becoming Honorary Associates here, gain much of the special knowledge they desire; will doubtless learn that architects have nobler aims than are represented by five per cent, and, albeit that represents their livelihood, can and do put it in a secondary position in relation to their clients, whether they are the public or are private individuals."

IN furthering its outside influence, and therewith the general esteem of the profession, which seemed likely to droop under the scorching attacks of Sir Edmund Beckett and Mr. Bentinck and other aggressive unbelievers, the Institute seems to have done a good work. The appointment of the president by the Prince of Wales, as a member of the British Commission for the Paris Exhibition of 1878, was no doubt a useful as well as a reasonable compliment. The advice of the Institute has been of practical service to the government in the preparation of a general code of building-laws for the kingdom. It has been enabled to make itself felt too in other public matters; being consulted by Parliament in regard to the question of copyright in the design of works of art, wherein it urged the rights of architects to property in their designs in a way that promises to be of benefit to the profession; and being designated, also by Parliament, as counsellors to the Metropolitan Board of Works of London, concerning the treatment of the great new thoroughfare in that city, called Northumberland Avenue (see *American Architect*, No. 75). This last duty was supposed to be a difficult and uncertain one, for the Board of Works has been thought a body rather intolerant of advice, given to a keen regard for rates, and to a cynical contempt for less practical things. The Council of the Institute seem, however, to have succeeded in preserving amicable relations with the Board, and in exerting some influence in the design of the buildings proposed for the new street. How great that influence was, is not clear from Mr. Barry's address; but it does not appear that the Council were successful in their reasonable desire to secure a coherent design for the treatment of the whole street. In fact, they were allowed to pass only on single buildings, and their moderate success may be conjectured from Mr. Barry's remark that, "although the Council could not give an unqualified approval even of the modified design, they felt that the Board at their instance had gone as far as they could be expected to do in requiring alterations which might seriously affect the expenditure." It should be remembered, by the way, that such street improvements are carried out in a way very different from ours; for, instead of simply appropriating the land actually occupied by the new street, and allowing damages, leaving the adjacent land to its former proprietors to make the best of, as is done in American cities, the Board of Works, as we understand it, condemns the abutting lots on the street, pays for them, appropriates them, and then lets them out on ground rents to whoever will lease them and build on them; but retaining, if it will, the power to prescribe what shall be built. The failure of the Council to fully impress its views is to be regretted; for such an opportunity to make a fine street, in a great city whose streets are not fine, does not often occur,—has not occurred before in London, we believe, since Regent Street was built,—and there is no likelihood that the thing will be better than a botch if the buildings are designed piecemeal. It is also to be regretted because there was a good occasion for the authorities to show reasonable respect to the advice of a profession whose advice in the designing of a thoroughfare or the adorning of a city is entitled to respect if anybody's is; and for the representatives of that profession to prove the value of its advice.

WE find in the *Architect* some significant statistics concerning the rapid increase of cost in building of late years in Germany and Switzerland, taken from some papers in a Swiss journal. Thus in Berlin the wages of masons rose one-half in five years from 1868. The observations go to verify the fact that has often been told elsewhere,—that as wages have risen, the efficiency of workmen has decreased. That a part of this increase is due to the general inflation of prices at Berlin since the war, and to the general depreciation of money, there is no doubt; but the difference is much too great to be accounted for only by these causes, and a similar increase has taken place in other cities of Germany and in Switzerland. In Berlin it is found, for instance, that the same force of masons which in 1868 would dress more than six hundred stones of one kind in a week would in 1877 dress only about three hundred; that is, that the production was diminished one-half, while wages had risen one-half; in other words, that the labor cost three times as much as before. That this represents a general tendency of the day, there is no doubt. Testimony is too universal, both in Europe and the United States, not to be convincing. Every reasonable person will rejoice at any real bettering of the livelihood of working-men; but when the improvement, if it is real, is made at such excessive cost to society, and when in addition it appears that the efficiency of the workman is greatly impaired, it becomes a serious matter. At first sight it would seem that at least the increase of cost is so much increase of the current earnings of the workman in the shape of wages, but even this is only partially true. In the first place, the house which costs twice as much to build as it used, takes a great deal longer in building, so that the increased sum spent in wages is distributed over a longer period; as in the Berlin example cited above, only one-half

the increase was due to raised wages, and the other half to greater slowness In the second, a very considerable part of the wages nowadays is squandered by the trades-unions in strikes, and the workman who earns it has no use of it at all. A great body of English masons has been on strike for four months out of the last twelve, so that in the year they have only earned two-thirds of what their rate of wages would indicate. In two ways it happens, then, that the added cost of buildings fails to raise the earnings of the workmen, and a good part of it seems to serve only as a bonus on idleness.

THE San Francisco labor reformers quite outdo their English fellows in the drastic quality of the means by which they propose to set the world right. The peculiar turn of their eloquence makes one instinctively look about for the means of discipline by which unruly boys are kept in order. Not long ago one Kearney, in an open-air address to the "working-men," prophesied, "When I have thoroughly organized my party, we will march through the city, and compel the thieves [the Central Pacific Railroad] to give up their plunder. I will lead you to the City Hall, clear out the police force, hang the prosecuting attorney, burn every book that has a particle of law in it, and then enact new laws for the working-men." And now Mr. Kearney announces to another meeting that he has telegraphed to President Hayes that the working-men "have banded themselves together to resist, peaceably if they can, forcibly if they must, further immigration of the Chinese." It is our American habit to leave our rulers, and especially our President, at the mercy of everybody who chooses to intrude upon him either with personal concerns, or with admonitions, public or private; but it seems as if there were excesses of insolence from which even the chief magistrate of the country might deserve to be protected. There is a contrivance which has lately been revived in England with wholesome effect upon certain brutal disorders, which the humane president of a famous society in New York has lately recommended there, and which was found in times past to be an efficient corrective of offences against decency, — the whipping-post.

THERE seems to be at the West great faith in fire-ladders attached to buildings, — a faith which may be obstructive to better provisions for safety against fire. When we recorded the laws passed in Wisconsin and Illinois, to compel hotel-keepers to put wire ladders in every upper room, we ventured to say that they must prove inoperative or useless; and we have no reason now to think otherwise. The burning of Field, Leiter, & Co.'s great warehouse in Chicago naturally has stirred up alarm, since it was apparently due to the combustibility of the wooden roof and to its being above the reach of the firemen, and its fatality to the fact that the building had only wooden stairs. The result is shown in Chicago by the passage of an ordinance which orders that "All buildings except such as are used for private residences exclusively, of four or more stories in height, shall be provided with one or more metallic ladders or metallic fire-escapes extending from the sidewalk to the upper stories of such buildings and on the outer walls thereof." There would be a considerable convenience in making all the roofs accessible to firemen; and the ladders may do something, though we fear not a great deal, in giving an escape to people in a burning building. But they would certainly offer great facilities to burglars and other disturbers of the peace. We fancy that the difficulties of the police would be greatly aggravated in pursuing malefactors, if every fugitive found a ladder to his hand on every building. These dangers, it is true, might be lessened if the ladders did not start from the sidewalks, but were cut off below at such heights that the firemen could easily reach them by movable ladders, and that people might safely drop from them; but even these would be, to our notion, but a poor substitute for the precautions that ought to be taken. The Field and Leiter building had a wooden mansard above four stories of front. Such buildings, of which there are many in Chicago, are too dangerous to be allowed in a densely-built city; and any device of fancied security that encourages them, and takes the place of a law to reform their construction, is likely, we fear, to do more harm than good.

WITH such a question as came up in the discussion over the choice of plans for the Kings County (that is, substantially, the Brooklyn) jail, when the charge of bribery was raised among the supervisors, we do not consider that we need concern ourselves further than to say, since the matter was mentioned by our New York correspondent, that the committee appointed to investigate the charge reported no evidence, and that their report was accepted as satisfactory. Some discussion about architects' fees came up, which may have an influence on the comfort of the profession in Brooklyn. A Mr. William Field is reported to have sent a letter to the jail committee, in which he offered his services as architect of the jail for a commission of two and a half per cent, saying that this was nowadays considered a reasonable fee. Notwithstanding this Mr. Mundell, who claims the regular five per cent, was chosen architect by a vote of eighteen to five. Undoubtedly, in both cases it was understood that the commission was to cover the entire professional services of the architect, superintendence included, although this is not specifically stated in the reports we get. Mr. Field is reported as a member of the American Institute of Architects. We do not find his name in any accessible list of the members, and we doubt his being one of them. Certainly, if the story of his proposal is true, his proper place is outside the Institute. There is nothing that tends more to make the way of architects hard, and to deprive their profession of the common respect which it ought to command, than the effort of some of them to "undercut" the rest. Our unprofessional readers may be presumed to know that, whatever may be the concessions of individuals in order to get patronage, there is nowhere any respectable usage which makes the fees of architects less than five per cent for full services, and that they are quickly accommodated to a fall in prices by the decrease in the costs on which they are estimated. Not everybody realizes, however, how much less remunerative the fees are in proportion to the work done when there is little of it. An architect's current expenses are large, and when he has little to do a much greater proportion of his fees goes out for office-rent, draughtsmen, superintendence, and other expenses, than when he is full of work; so that not only are his fees less, but he gets a less proportion of them for his own compensation. The proposed jail is expected to cost three hundred thousand dollars, and is not likely to be less than two years in building. Five per cent on this estimate is fifteen thousand dollars. The expense of carrying on the work, if it is thoroughly done, will consume half of this or more; and if, for the remainder, the county gets the services of a good architect for two years, he will not be overpaid.

THE people of New York are still in trouble over the cleaning of their streets. The Sanitary Superintendent has lately reported to the Board of Health that the streets are dirtier than he has ever known them at this season, and intimates that unless something is done for them promptly, they must remain so all winter. The Street-Cleaning Bureau has declared the plan of burning the garbage to be a failure, and the only resource at hand has been the old habit of carrying the sweepings out to sea, and throwing them overboard. But of late the weather has been so rough, says the Bureau, that the scows cannot get to sea, and the city remains unswept. Under the stimulus applied by the Board of Health, the Bureau had, however, made an arrangement with a certain firm at Bayonne, N.J., in virtue of which it had begun to carry off three or four thousand loads a night. When we look to see what is done with these three or four thousand loads by the Jersey men, we find that they are used "to fill up vacant lots." It is not surprising, then, that the Bureau expects the interference of the authorities at Bayonne before long, and is casting about for some new device. Capt. Gunner, its superintendent, proposes the building of four large steam hopper-barges, which shall be seaworthy in all weathers, and able to carry off a thousand tons of refuse, and dump it twenty-five miles from shore.

A LETTER which we have just received reminds us of a promise we made at the beginning of this year to give our readers a series of papers on perspective. The promise is by no means forgotten, though we have been slower in fulfilling it than we hoped to be. The subject is one which for

its proper development required that all or nearly all the papers on it should be prepared before any of them were published; and the preparation has proved to be a matter of time. An additional difficulty in providing the plates has increased the delay, but we hope now to redeem our promise before long.

THE LABOR TROUBLES.

THE STRIKERS IN ENGLAND.

IT does not appear that the labor war in England is coming to an end at present. The dispute between the shipwrights and employers on the Clyde appears to have been settled by arbitration. Lord Moncrieff, who was made referee, decided that the condition of shipbuilding would not allow an increase of wages. But in London the masons' strike is apparently no nearer a settlement than before; and now the carpenters and joiners have appealed to their masters for the same advance in wages for which the masons have been striking, and the inference is that if they are refused they will follow in the strike. The stone-masons' strike has been one of the most obstinate of its kind. For three or four months the masons have been out for a decrease of working hours and an increase of pay. Their pay is by the hour, the old rate being ninepence and the rate demanded tenpence, while the number of hours required weekly has been fifty-five and a half, which it is the object of the men to decrease to fifty. In some cases the employers have yielded, at least so far as the increase of pay is concerned. The contractors for the most important buildings now going on in London, including the New Law Courts and the Temple Buildings, however, have steadily refused to yield to the demands of the men; the contractor for the Law Courts taking courage perhaps from the provision in his contract that in case of strikes an extension of time should be allowed him. We have mentioned the first attempts to import German and American workmen. The Germans were tolled off before they had been at work three days, and sent home by the strikers, who paid their expenses: the Americans were disposed of still more promptly, and were induced to join the strikers at once. These "Americans," as might be supposed, were themselves imported Americans, by all accounts, fifty-five out of fifty-eight being Irish, and the other three Germans and Frenchmen. Subsequent importations have been more successful, and some sixty foreigners, Germans and Italians, were got to work upon the Law Courts, who were secluded from outside influences by providing special quarters and feeding them in the buildings themselves. But even with this the contractors have not secured themselves against a gradual falling-off, and the men have still been slipping away day by day. The importations continue however, and more men have been brought from the United States, Canada, and the Continent.

It is not surprising that such a process should have failed to supply the English market with a very trustworthy class of workmen, or that the heat of the conflict should have led to questionable acts. The workmen seem on the whole to have been cynically careless of good faith. The Germans who were first imported stole away in the early morning after one or two days' work, and were on their way to Germany before they were missed. The American carpenters who had been brought some time before to meet the strikes in the North had behaved no better. And a company of thirty-eight Canadians imported to London a few days ago to work for the Messrs. Dove, who have several churches in construction, melted down to one man in the course of a single day, all the rest having one by one taken their tools and disappeared among the strikers. In all these cases the passage-money of the workmen had been advanced by the firms which employed them; in all, therefore, their leaving was really running away with so much money. There has been little attempt at violence in London, because the masons have been too shrewd, and if subornation of fraud is any more respectable than violence we may perhaps say too respectable, to resort to it. But it is clear that the men who have consented to work have not been allowed to have a comfortable time of it. They have been hustled and hooted on their way to and from work; some Italians among them, whose uncommon looks made them especially obnoxious to a mob, were very roughly handled, one of them being seriously hurt. On the other hand there are complaints that the agents of the masters, in engaging the foreigners, did not give them fairly to understand the circumstances under which they were wanted, and kept the knowledge of the strike from them. This may be the case: if so, it shows not only disingenuousness, but a surprising want of forecast, for it gave the men the most convenient pretext possible for evading their promises. A few days ago some of the American workmen, who had been engaged in New York by Mr. Bird, the agent of the London Master Builders' Association, applied to be released from their engagement. They had signed an agreement to work for him for six months in London, and to repay their passage-money in instalments, allowing him to retain their tools as security. In London they were turned over to Mr. Booth, the contractor for the Temple Buildings, where work was stopped in July by the strike, whose foreman refused to let them take their tools and leave their work; and on the ground that Mr. Booth was not Mr. Bird, they appealed for a discharge. Inasmuch as their application was granted by the magistrate, it must be inferred that they were entitled to it; but it does not appear that they were the victims of any greater grievance than a contract that proved technically less binding than the masters expected; while it does appear that they got away with Mr. Booth's passage-money. There have been complaints more or less, on the part of the imported Americans, of bad treatment on board the steamers which brought them. Since however their specific complaints recorded are no worse than that their food was "pitched at them," their potatoes served with the skins on, and that they got nothing better from the surgeon to "keep their spirits up" than a dose of salts, we may infer that they were not more hardly used than steerage passengers are apt to be. So far as appears from the evidence, the bad faith is chiefly on the side of the men.

The mischief which the labor war is doing on all hands is formidable enough. Ship-building in the North has been greatly depressed by it, and the building trade is paralyzed all over the island. But the building-trades have perhaps not been exceptionally unfortunate. There is something pathetic in this passage, which has gone the round of the papers, from a letter of Mr. Crawshay, the Welsh "iron king," proprietor of works that have been running for two centuries: —

> "Trade is worse than ever it was, and I see not the slightest chance of Cyfartha starting again. I think so badly of trade altogether that I have no wish to see my sons remain in it. I do not think I can possibly live very long, and if I am able I shall sell the works before I die. There is nothing now to bind me to them, for I have been estranged from them by the conduct of the men. I always hoped and expected to die with the works going and the same feeling among the men for their employers as before; but things have changed, and all is different, and I go to my grave feeling that I am a perfect stranger, as nearly all my old men are gone."

This means a great deal more than the disheartening of one large manufacturer, or the breaking-up of one large business; it is an index of the disorganization which the war is carrying into all branches of industry. The immediate cost of the present strikes is enormous, both to masters and men. Apparently pretty much the whole business of building is at a stand-still. In London and other large towns, notably in Manchester, where there has been a long strike of carpenters and joiners, a very great amount of capital is lying idle, very important works stand interrupted, and contractors are under heavy losses. The mere cost of importing workmen has been considerable, and apparently most of it has been wasted. One firm alone spent two thousand dollars on the two-score men it brought from Canada, without getting a day's work out of them. The masons' union has been paying about six hundred dollars a day to the men on strike, who are some eight hundred, in allowances of eighteen shillings a week; and to this must be added a good deal of expense in returning the nomadic masons to their homes.

The struggle has become one of peculiar significance from the evident determination of both sides to make it a test. The masons proclaim that they are in no danger of lack of funds to carry it on. The masters persist, for they have apparently concluded that they must bear their present losses unflinchingly, and hold their own now, lest worse things follow. The introduction of foreign workmen gives the fight a wider interest than any that preceded it. The masters are trying the last device that is left them for gaining an advan-

tage over their men: if this proves ineffective they have nothing to fall back on, that we see, but a mere struggle of endurance. It has imported the question of free trade in labor just when the condition of the export market is beginning, it is said, to shake the allegiance of British manufactures in the traditions of this generation. But both tradition and immediate interest here engage the capitalist to maintain the established policy of free trade. How much of a resource the importation of workmen will turn out to be in practice, it is difficult as yet to say. It cannot be supposed that the masters will be able to use it on a scale sufficient at any time to "swamp" the native workmen, and make themselves independent of them, or to hold out against them if they are permanently and firmly banded together throughout the kingdom. On the other hand, it may prove sufficient to turn the scale in contests which without it would be pretty evenly balanced. A late report is, that the masons had agreed to propose a meeting for compromise, and that the masters had refused it. If the masters have absolutely, as they claim, made their contracts on such terms that they cannot pay the increase which the men demand, we may expect them to hold out obstinately. That workmen cannot continue indefinitely paying out money, and making none, is plain. It remains to be seen how long the masters will bear the strain. Already we read of some unexpected results of the controversy, which will probably please neither party to it. German contractors have offered, it is said, to come to England with their own men, and undertake contracts there, putting themselves and their men under the protection of the German consul. Whether the protection of the consul would shield them from the danger of having their men enticed away by the strikers is questionable, but interest and national feeling perhaps might. If this should become a habit we might see something like a revival of the old itinerant companies of mediæval free masons. Meanwhile the workmen have their own international unions, which are at least noisy: how powerful they may be, remains for them to show. But the foreign game is one that two parties may play at; and while the habit of striking is spreading both in Europe and America, and invading countries to which it was strange not long ago, it is not likely that effort will be wanting to unite the bands of discontented workmen in general movements. There is a possibility, greatly to be deplored, that their desultory struggles may turn into a general warfare of class against class.

THE CHURCH ARCHITECTURE THAT WE NEED.[1] — II.

FROM the subdivision of the empire of Charlemagne in the ninth century until the eleventh century, during which period architecture was entirely controlled by the ecclesiastical orders, no marked change or progress is to be noted. But with the franchises gained by the communes in the eleventh century, independent societies of artisans sprang into existence, and a new impetus was suddenly given to church architecture. The new state of society required churches in harmony with the new ideas, — more spacious and less gloomy.

The semi-circular form of arch used by the Romans in their barrel vaults, their groined arches and domes, offered great difficulties in their adaptation to the complete system of vaults occurring in the mediæval church. Their ponderous weight, too, requiring massive piers and walls of great thickness, was altogether inconsistent with the requirements of the problem now to be solved, viz., the vaulting of a vast space on a given plan, virtually that of the basilica, in a substantial, economical, and artistic manner. This difficulty was overcome by Suger in 1140 at St. Denis, where for the first time the ogive arches, heretofore employed only decoratively, were used constructively, they being here used as ribs or stone centres, subdividing the space to be vaulted into compartments, which were covered in by independent vaultings of lighter material resting on these ribs, which formed a skeleton frame of the vault. The thrust of these various ribs and arches was most scientifically resisted by counter-thrusts, securing a perfect equilibrium. By thus subdividing the vault into compartments and reducing the supports to independent piers, and by the use of the ogive and pointed arches, spaces of any shape in plan could be vaulted over with comparative ease, and perfect freedom in planning was obtained.

This radical change in the method of construction led to corresponding modifications in the artistic treatment of the design. Owing to the extreme lightness thus attained in the construction, the massive Romanesque piers which encumbered the interior, and rendered it dark and gloomy, were replaced by lighter ones, needed only for the support of the superincumbent weight; the thrust of the vault being now counteracted by a system of flying buttresses extending outside and over the aisles to vertical buttresses surmounted by pinnacles, leaving the space clear below. The galleries over the aisles, at first retained, were generally omitted in the thirteenth century, the triforium alone intervening between the aisles and clerestory, the interior thereby gaining in stateliness. But perhaps the most striking alteration grew out of the vast importance now given to the window openings. The comparatively small Romanesque windows were gradually enlarged until finally the entire side walls between the piers were done away with, and replaced by stained glass, the superstructure being supported by discharging arches over the openings, subdivided by mullions, with an endless variety of tracery above, while the glorious rose-windows illuminated the west end and the transepts. By these and other changes the massive and gloomy Romanesque church of the eleventh century was transformed into the more elegant and brilliant cathedral of the twelfth and thirteenth centuries, during which period the cathedrals of Paris, Chartres, Rheims, Amiens, Rouen, and many others, were erected in France, where the Gothic style originated, which was destined to supplant for a time all others in western Europe.

When the scholastic mind of Italy, during the sixteenth century, returned with zest to classic literature, it naturally led to a resumption of classic architecture, particularly as the Gothic style had never obtained a strong foot-hold south of the Alps, where the soil was covered with monuments of antiquity, before the grandeur of which all their modern works were dwarfed into insignificance. This return to the glories of the past spread rapidly through Europe, where the influences of Rome were everywhere strongly reflected. The same result was more particularly brought about in the North by the Reformation, and the consequent revulsion of feeling regarding every thing appertaining to the power of the priesthood; while the art of printing opened a new field to the laity, and closed, as it were, the records which had been written up to that time on pages of stone in the sculptures and decorations of the Church. With the return to the classic treatment, now called the Renaissance, the basilica type, still adhered to, assumed once more in some degree its primitive simplicity; but, unfortunately, the idea that the introduction of the classic orders on a large scale would be productive of a corresponding effect proved a fatal mistake, especially in the interiors, where the laws of proportion governing the orders necessitated the introduction of details of such magnitude as to produce a contrary result. This is fully exemplified in St. Peter's, Rome, which, in spite of these defects, offers, in the grandeur of its vault and the majesty of its dome, the most sublime interior in existence, due to the colossal mind of Michael Angelo, and which has served as a type for centuries.

In the early part of this century the unfitness of the prevailing church architecture to the wants and requirements of Protestant worship was so universally recognized that it led to the so-called "revival in church architecture;" and in the desire for a radical change, mediæval architecture, which appeals so strongly to the religious sympathies, was deemed the only style to be employed; and as in the sixteenth century, when the Gothic style was abandoned for the Renaissance, the latter in its turn, after three centuries of trial, was destined to a similar fate. Great efforts were made to revive the glories of the past; and while much praise is due to those who have devoted their lives and talents to the arduous task of rescuing from oblivion those grand landmarks of Christianity, and in reproducing them, their efforts have only been crowned with partial success, for although great strides have been made in religious art generally, but little has been accomplished in the matter of fitness of plan. The Basilica still universally adhered to, and admirably adapted to the wants of the Romish Church of the thirteenth century, proves to be ill suited to Protestant worship at the present day. Its piers subdividing the nave and aisles offer insurmountable difficulties, — a radical objection, whether treated in the Romanesque, Gothic, or Renaissance style; and has led not unfrequently of late years to the total abandonment of this type in favor of the galleried churches, where all ecclesiastical character is sacrificed to the accommodation of the congregation.

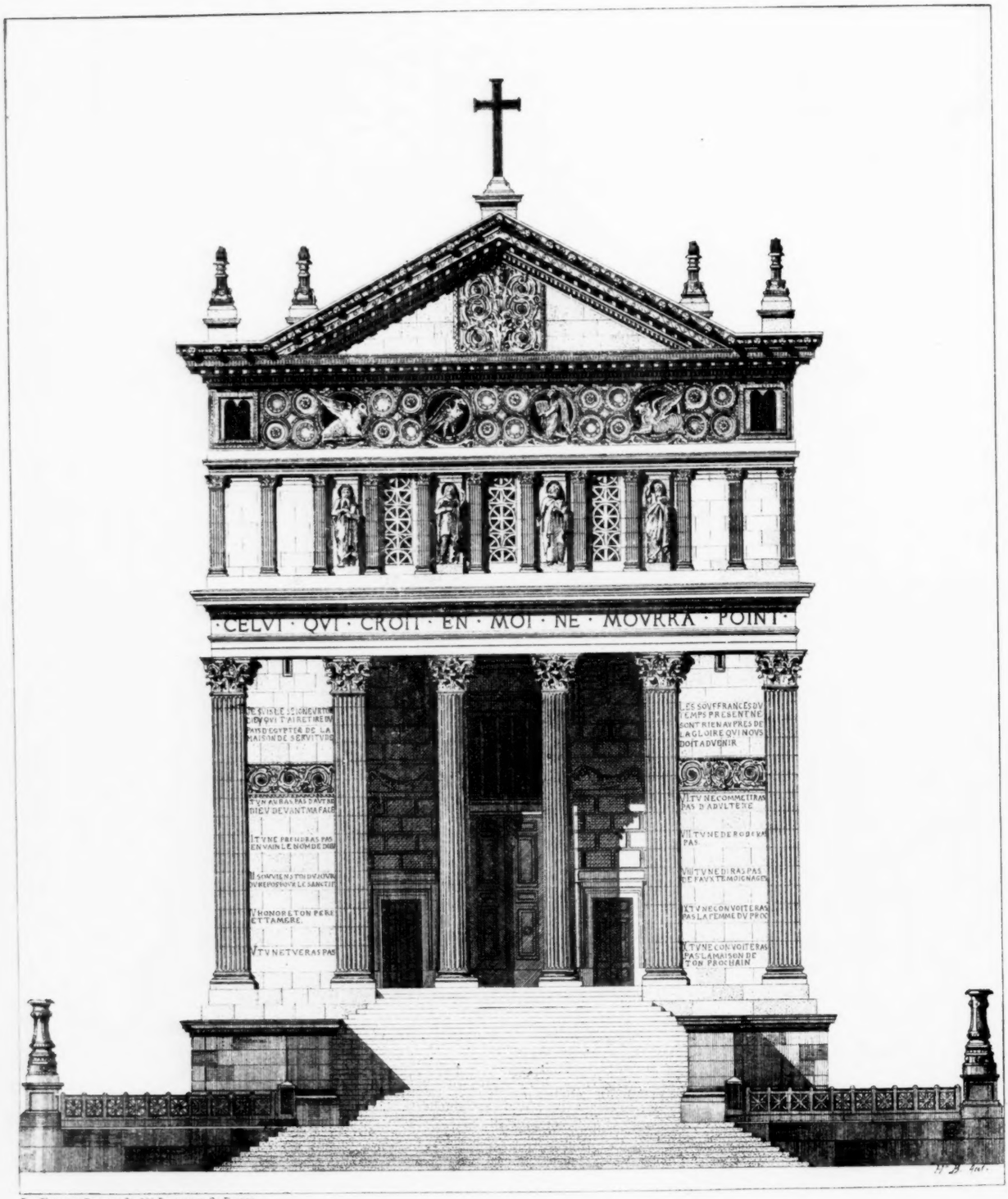
Having thus briefly sketched the history of church architecture, it may be well to suggest some of the needs and requirements of the Protestant Episcopal Church, which may be summed up as follows: First, worship and instruction, the two ends for which the church is to be reared, should be well considered in the condition of the structure. Second, dignity and repose should characterize all religious edifices, while the "house of prayer" should appeal to our sense of awe, lifting the thoughts from the finite to the infinite. Third, church architecture, of all others, should be truthful throughout in its arrangement, its construction, and decoration. The church should be so planned, that beside the proper and suitable provision for the officiating clergy about the altar and communion table, the congregation should be so accommodated that all may see and hear, and thus be enabled intelligently to take part in the services.

The various materials employed should be well selected and well adapted to their various purposes; and the construction to be satisfactory should be visibly sound, as well as in reality so

[1] A paper read at the Fourth Church Congress held at New York from Oct. 30 to Nov. 2, by Mr. Richard M. Hunt, F.A.I.A.

WOODEN MANTEL.
In old house at Fort Hamilton, N.Y. Harbor.
Scale 1/2 in. to ft.
Details 3 c.
Measured & drawn by Henry A. Dagget.
1877.
Rabbeted & Square

GARDENER'S COTTAGE
FOR
JAMES CORREY, JR. ESQ.
NEWPORT R.I.
FIRST FLOOR PLAN
PIAZZA
LIBRARY
DINING ROOM
KITCHEN
HALL
PARLOR
STURGIS & BRIGHAM
ARCHITECTS
19 EXCHANGE PLACE
BOSTON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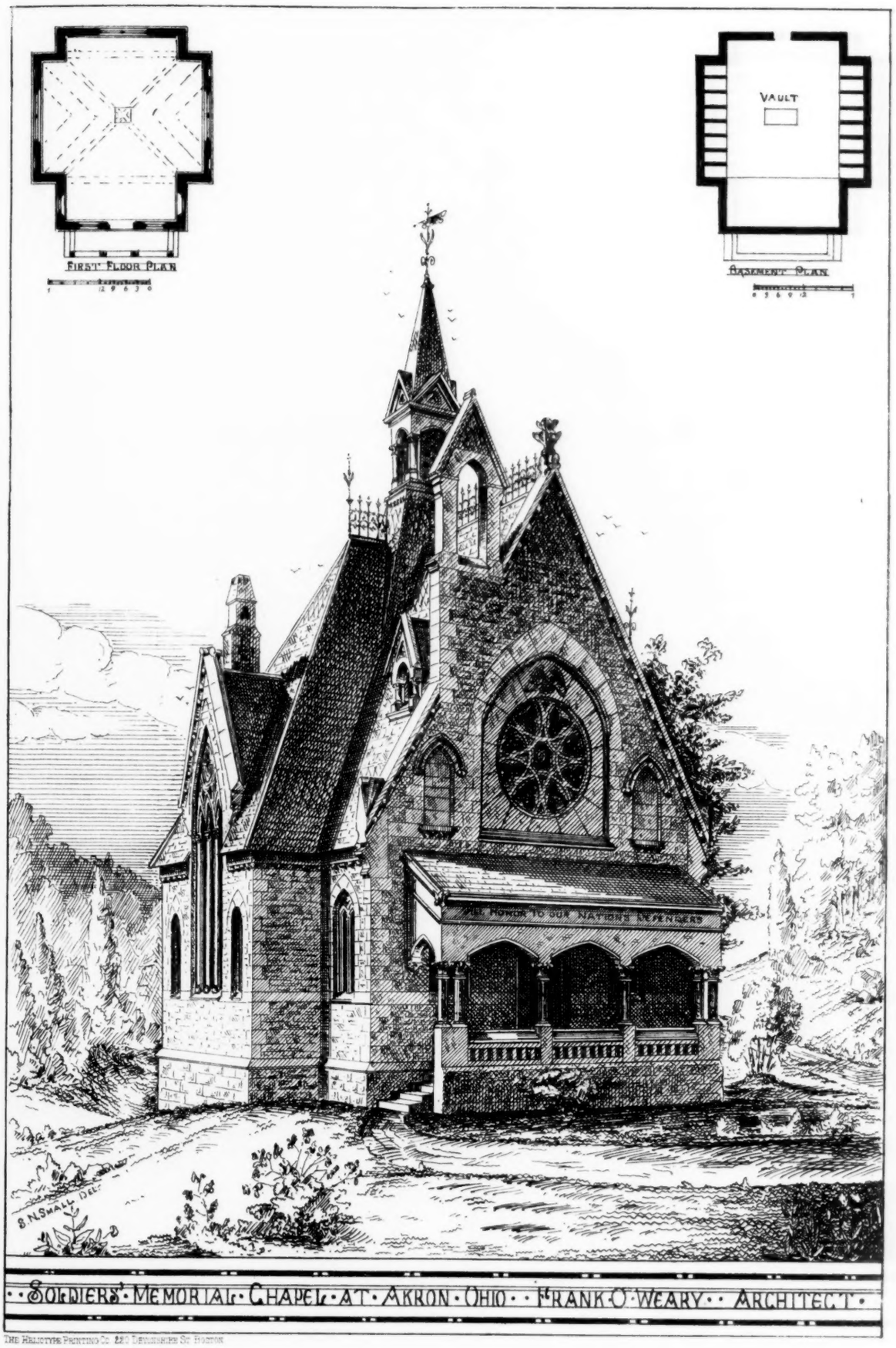
THE HELIOTYPE PRINTING CO. 330 DEVONSHIRE ST. BOSTON

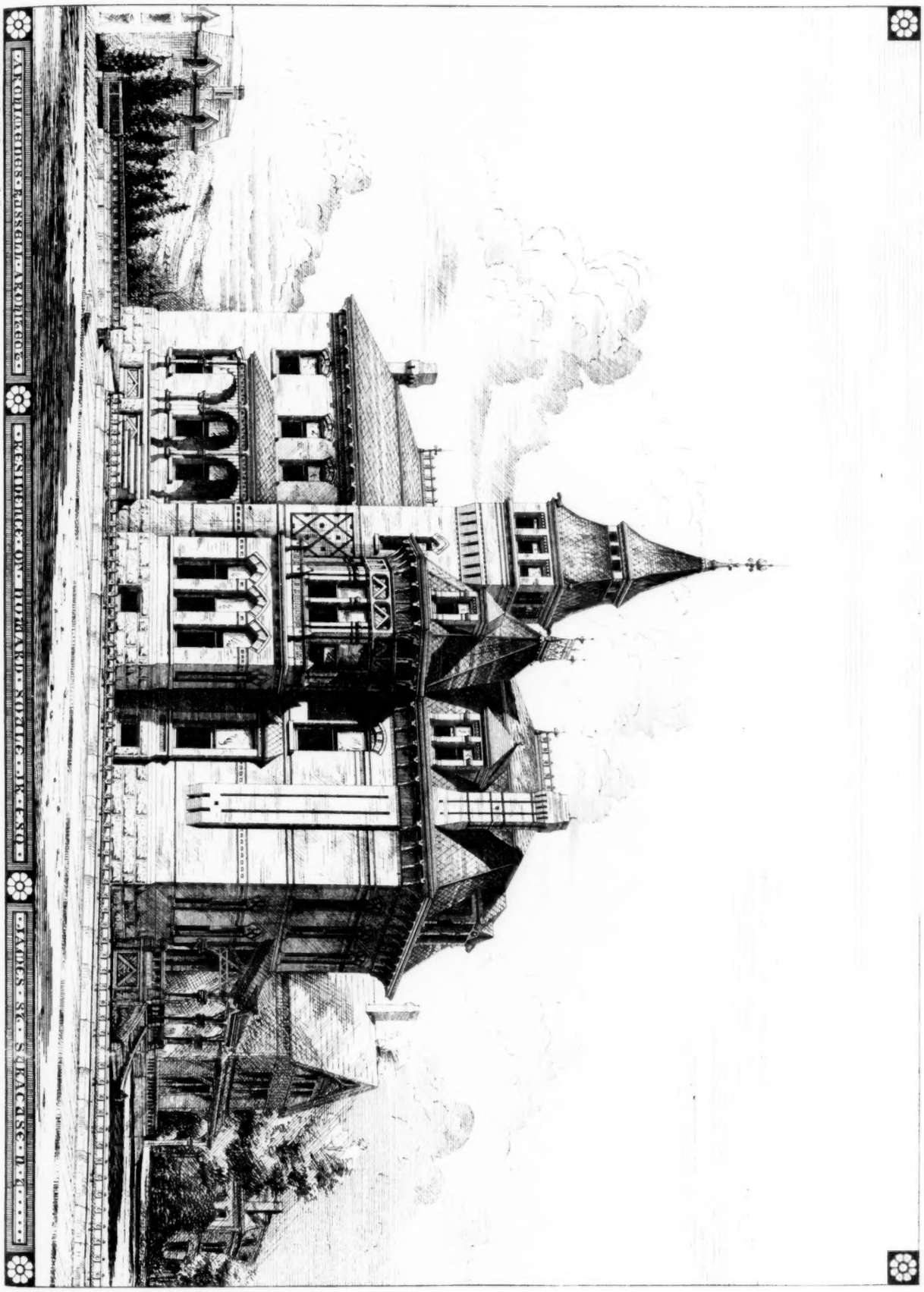
PROTESTANT TEMPLE

DESIGNED BY M. GALERON



SOLDIERS' MEMORIAL CHAPEL AT AKRON OHIO FRANK O WEARY ARCHITECT

THE HELIOTYPE PRINTING CO. 220 DEVONSHIRE ST BOSTON


RESIDENCE OF HOWARD NOTTAGE ESQ.
LADIES ST. SYRACUSE N.Y.

The sister arts of painting and sculpture employed in the decoration should be so guided as to increase the monumental effect of the edifice, and fill the soul with religious emotion. Let us now consider first whether the above conditions and requirements are satisfactorily met and solved in the basilica; and, second, what improvements or alterations, if any, suggest themselves.

Among the advantages of the basilica plan are the numerous points of support, reducing thereby the space of the vault or ceiling, with a consequent reduction of cost. But what is of greater importance is the apparent height and length gained by reducing the apparent width, a feature of great importance, especially in Gothic work, as exemplified in the English and French cathedrals; the former being noted for their extreme length, while the latter are renowned for their excessive height. Among the disadvantages of the basilica type is the great length of nave necessitated where the congregation is numerous, offering an objectionable if not fatal feature oftentimes on account of the acoustic difficulties to be overcome, which are increased, of course, where the transept is introduced, and where the nave is carried to a great height, as in the Gothic treatment. That mechanical contrivance, the sounding-board, introduced over the pulpit, while it may overcome the difficulty to some extent, is a painful reminder of a defect. Its objectionable obtrusion mars the general effect, and makes one desire a more dignified remedy for the evil. The above objections in acoustics hold good in regard to the piers which in addition obstruct the view of about one-fifth of the congregation. The great difficulty experienced in overcoming this defect has led to various devices. The piers are sometimes diminished in numbers, being placed at greater intervals longitudinally, the effect of which, unless accompanied by a corresponding increase in the height of the nave, is detrimental, reducing, as it does, the apparent height, thus giving a low and dwarfed appearance to the interior. Again, the piers at times are reduced in size, iron being used in place of stone where the nave vault and the clerestory are of masonry. Wooden supports are also employed where the vault and clerestory are abandoned, or where the latter is constructed in carpentry, and the former replaced by apparent timber-work, or ceiled in. Now, while these devices only afford a partial remedy (for still they obstruct the view of many), they tend to destroy the architectural effect by their thin, attenuated look; and though the structure may be in reality stable, it no longer has the appearance of being so, — an absolute essential of all good work. Again, the change of material from stone to iron or wood gives the structure a cheap look, incompatible with, and destructive of, all dignity, — a most important element.

In conclusion, it appears that the attempt to adapt the basilica to the wants of the Protestant Church has generally failed, for where satisfactory accommodation has been secured, architectural effect has been sacrificed; and on the other hand, where the architecture has been noble and satisfactory, it has been at the cost of great inconvenience to the congregation. The difficulties and objections increase with the size of the structure, the type itself, with its nave and aisles and subdividing piers, being radically defective. In fact, if, as is so often asserted, the church problem of the thirteenth century was most satisfactorily solved, it hardly can be suited to our present wants, as formerly besides providing for the clergy about the altar, the one essential requisite was to impress the mind of the laity with mystery and awe; while with the change of ritual, and now that it is deemed wise and expedient for the congregation to see and hear all that transpires about the altar, the conditions are changed, the great desideratum now being an unencumbered space about the altar. This, when considered from a constructive point merely, offers no difficulties, as there is no actual need of piers or columns for support, as demonstrated in the many vast structures of the present day. But while with their disuse the problem might be practically solved, still it would often be at the sacrifice of proper artistic treatment, especially in works of great dimensions.

Much can be done towards overcoming the objection to the employment of columns, by placing them farther apart, or by keeping them near the walls; in the latter case, the objection is totally removed; but in the former, where the bays are enlarged, there is a tendency to destroy the scale of the building by lessening its apparent size. This can be remedied in a degree, however, by introducing secondary features, such as subdivisions in vaultings or ceiling compartments, grouping of windows, minor arcades, etc.

Let us now consider what may be suggested by existing examples, where almost every form in plan is to be found. The circular shape — perhaps the first to suggest itself, and which is most grand in its unity, especially where the dome is employed — unfortunately proves deficient at times, on account of the reverberation of sound. This defect, however, disappears when it is combined with other forms, as where a chancel or other adjunct is introduced. These remarks apply likewise to the various forms allied to the circle, namely, the hexagon, the octagon, the ellipse, and the vesica. The oblong plan without aisles, so commonly employed, is unobjectionable in churches of moderate dimension in so far as seeing and hearing are concerned. They are, however, perhaps a little monotonous, which defect can be greatly diminished by a judicial use of internal buttresses of slight projection, and by a skilful treatment of ceiling and wall surface. Closely allied to this aisleless type, is that where columns or piers separate the nave from the aisles, which are so reduced as to become passages merely — the sittings being confined to the nave. With this arrangement, the interior gains greatly in monumental effect.

In the more important structures of this class, where domes and vaults are employed, necessitating heavy buttresses to resist the thrust, they have been used both exteriorly and interiorly. In the latter case, they are sometimes objectionable, as by their projection they obstruct the view of the windows in the clerestory. This drawback disappears when the buttress is used on the outside, and carried over the aisles, leaving the space clear underneath; or where the clerestory windows are omitted, and the interior is lighted from above, as when domes are employed. Precedents are not wanting of the oblong type of church of immense size; but on account of acoustic difficulties, where great space is required, the cruciform shape — produced by the introduction of transepts — is preferable, as the length of the nave is thereby reduced, and the worshippers are brought nearer the chancel. This symbolical form, so appropriate and so universal, affords also the advantage of great variety of perspective effect, and permits endless modes of treatment both with the rectangular and apsidal termination of the arms of the cross, and is especially striking when the lantern or dome accentuates the crossing; and the nearer we approach to the Byzantine type, where the church becomes square in plan, and the Greek cross replaces the Latin, the more nearly we arrive at the desired solution. In fact, the Byzantine church, without doubt, presents superior advantages over all other types for Protestant worship, for in addition to the vast unencumbered space below, the deep recessed galleries above here become integral parts of the construction, and instead of being a blemish, as in other styles, add to the interior effect, their smaller features contrasting with the vast expanse of the arches above, whereby the scale is increased, while the broad wall surfaces and the majestic dome combine to render it in its unity impressive and monumental.

Finally, while much is to be gained by retrospective study, we should bear in mind that archæology is not architecture, and that it is much more essential that our architecture should be true rather than traditional. Real progress can be hoped for only in originality of ideas, and not by confining ourselves to servile copying.

THE ILLUSTRATIONS.

DESIGN FOR A PROTESTANT CHURCH.

WE reproduce this design from the *Croquis d'Architecture* of the *Intime Club*, as it shows at once the character which Frenchmen think should be given to a building intended for Protestant worship, and also the freedom with which the students of the *École des Beaux-Arts* are allowed to treat the orders, and classic details.

SOLDIERS' MEMORIAL CHAPEL, AKRON, O. MR. F. O. WEARY, ARCHITECT.

GARDENER'S COTTAGE FOR MR. J. CAREY, JR., NEWPORT, R.I. REMODELLED BY MESSRS. STURGIS AND BRIGHAM, ARCHITECTS.

In this design the architects have made no change in the internal arrangement, the work consisting entirely in the treatment of the exterior. The house was originally a plain square structure, with a pitched roof.

WOODEN MANTEL.

This sketch presents a mantel-piece in an old house at Fort Hamilton (on the Narrows), New York Harbor. The exact date of the construction of the house is not known, but it was built somewhere near the end of the last century, and the mantel was evidently made at the same time. It is of wood, painted white. The mouldings are quite elaborately carved, and are in good preservation, though numerous coats of paint have rather dulled the sharpness of the carving.

HOUSE OF H. SOULE, ESQ., SYRACUSE, N.Y. MR. ARCHIMEDES RUSSELL, ARCHITECT.

This house, which is but lately finished, is built of the best front brick. The total cost was about $12,000.

CORRESPONDENCE.

THE WORK OF ENGLISH ARCHITECTS ON THE CONTINENT. — SWISS BARNS.

PARIS.

ONE cannot fail to be interested in all efforts to develop modern architectural effects from the primitive forms which the necessities of climate and material impose upon the peasants in each country; for, in studying these types, every country less readily falls into unreasoning imitation of its neighbors, and more intelligently produces a characteristic architecture. I have among my sketches an interesting example of such an effort in a picturesque little chalet just built in the Engadine Valley, Switzerland, by an English architect. He seems to have successfully found a refined, artistic expres-

sion for those rude Swiss *châlets*, which, niched like bird-boxes in the remotest crags and valleys, represent a simplicity of construction within the unaided powers of the peasant, who, however, guided by centuries of tradition is rarely content with the strict necessities of shelter. It is curious how the poorest peasants in nearly all old countries gladly follow traditional embellishments, originated perhaps by some village genius, or little by little growing out of longings for the beautiful through many generations. Certain it is, that there are few European countries where even the poorest, if untainted by city influences, do not amaze the money-making spirit of to-day by many ornamental devices quite unjustified by their means. The German and Austrian *châlet*, with which we are familiar in the toy wooden models, has lost its original robustness, and has in its cardboard character caught something of the prevailing German tendency to dryness of design, the fault of the corresponding virtue, — the pursuit of refinement. But in the example of which I speak, the open-cut wood-work, which used in profusion gives a flimsy character, is kept so subordinated that it gives the main construction additional solidity. The *châlet*, on the edge of a steep descent, and admirably planned for the view up and down the valley, is in the form of a cross; for the four gables project enough to be virtually wings, and give opportunity for sheltered balconies. The whole effect is most picturesque, though the varying height of the gables makes an unnecessary complication in the construction.

After the manner of the primitive *châlet*, where the rough logs projecting across the corners are notched together to give firm bearing, the walls are made of the thickest planking halved together at the angles, projecting across several inches, and at top and base with much greater projection profiled into suggestions of dragons' heads, etc. An idea suggested in the peasants' houses of the Engadine, where there is, in spite of a rigorous climate, much interest in flower-culture, has been gracefully treated in breaking the usually stiff lines of the balconies by corbelling out from the front hand-rail another miniature balcony or gallery for flower-pots. The interior is of course carefully sheathed and protected against the exposed cracks of the outer planking, the windows only being surrounded by frames with ornamented edges. I will only add that the exterior, left unpainted, has already taken a rich brown tint, and is decorated with quotations and epigrams after a fashion still existing on the southern slope of these mountains. I write these details with some minuteness, thinking that in our country, subject to heavy snow-falls, and employing much wooden construction, the *châlet*, as an ancient type in countries of similar peculiarities, should be of special interest; and that it has not had justice done to it heretofore, this decided renaissance of its best features is a proof.

The barns in the Engadine region are highly monumental, and are so arranged as to admit as much air as possible. Why the hay should be thus greatly exposed to the weather, I could not discover, as my inquiries of the farmers were met by a look of surprise, and the dogmatic statement that hay should be always open to the air. Whether this is an unreasonable tradition, or whether more probably in a land of long, dark winters, the hay moulds easily, or is otherwise injured by dampness, I must leave to some of our travelled farmers to decide. Whatever the *rationale*, it lends itself to a good architectural effect. In the simplest of these constructions, piers of masonry support the deeply projecting roof, and the sides are filled in with boarding spaced two or three inches apart; in the more pretentious, the walls are composed of two or three great arches closed with woodwork pierced in patterns; and, as many of these barns are very large, the lofty arches often enclosing two stories, the effect of the white masonry and the brown wood pricked through with the black open-work is fine. I have seen some modern adaptations of this idea for freight-houses.

Another building creditable to English art in foreign lands is a little chapel at Baveno. Here on the lovely shores of Lago Maggiore, Mr. Henfry, a wealthy Englishman, lives in a sumptuous villa, and has lately added to the attractions of charming gardens and terraces this exquisite private chapel. The architect, Mr. Pullan of London, has had an opportunity, here in the midst of Italian scenery, to design a monument appropriately rendered in his favorite Byzantine style; and the result is such as almost to justify that exclamation of enthusiasts, "a gem of architecture." The building, which contains about fifty comfortable chairs, is an octagon, surrounded by an aisle with eight monolithic columns, supporting the central structure, or lantern, with its low clere-story and steep pitched roof. It has two entrances with porches, — one for the family, and one facing the path by which the cordially invited strangers approach to the daily service. The other sides are occupied by round-arched triplet windows, with black oiled shafts in the jambs, and by the apse of the chancel. The gray stone exterior bears, in its quiet simplicity, the impress of a building for private devotion. It is in the interior that one is first deeply impressed by the perfect harmony of the elaborate decoration, of which I can only pretend to give the general scheme of color; as a description of the intricate development in details would be hopelessly confusing. From a dado of cold gray marble, the eye glides over walls of a cool yellow tone, banded in pale gray courses with unobtrusive patterns, up to a frieze of geometrically decorated squares of red and blue. Wherever one may look, this frieze, being of a decidedly marked coloring, — all below being paler and cooler, and all above darker and warmer in tone, — insensibly carries the eye around to the chancel-apse, where the intensity of the frieze is absorbed in similar coloring, more intricately developed. The whole, however, is so full of fine movement in graceful scroll and leaf decoration, as well as so complex in color, that the eye is charmed, and with difficulty, as in all good compositions, analyzes the carefully controlling scheme of decoration. The roof of the aisle, as well as of the lantern, is of a reddish color, the natural tint of the oiled wood, and makes a fine ground for the colored scrolls and foliage. The space between the windows of the apse and the frieze is filled with a graceful choir of white-robed angels, unfortunately on a gold ground, which does not add to the general solemnity of the apse as a darker one would have done. These figures, as well as those in the appropriate windows by Clayton and Bell, are, of course, of small size, and well in the scale of the building. As a whole, the decoration is eminently successful in combining a light, airy tone with rich harmonies of color, and the costly marbles and sculpture at the command of the architect are judiciously employed.

Mr. Henfry assured me that Mr. Pullan designed all the great variety of details in scrolls and patterns without reference to documents, as he only worked them up as they were needed for the workmen, being at the time a guest at the villa, having come with only a portmanteau. Who would not covet such an Arabian-Night sort of box! Mr. Henfry also told an anecdote which is characteristic of the intensely British spectacles through which your loyal Englishman sees the world. The columns of the porches are supported on the backs of the traditional lions often thus used in Northern Italy; and an Englishman, after carefully examining them, was heard to remark that he should think the owner, being a blooded Englishman, and opening the chapel to his country-people, might have been patriotic enough to have supported his columns on a lion and a unicorn. R.

STEWART'S WORKING-WOMEN'S HOTEL.

NEW YORK.

IT would require a middle-aged New Yorker to recall the date of the beginning of work on Stewart's Working-Women's Hotel. Records show that it was started between ten and twenty years ago, and has been crawling to completion ever since. At times work was brisk, and hundreds of laborers and artisans pushed the work along. At other times, often for months together, the great iron cage was left to the care of the keepers. There were no changes of plan from the original design prepared by the late John Kellum, whose inflictions upon New York in the several Stewart piles and the County Court House recall Shakspeare's lines upon the evil which is not interred with men's bones. A. T. Stewart too has gone, and among the many *quasi* successes of his life, those connected with matters architectonic find a type in this Women's Hotel. Everybody has seen it, as it stands in all its iron rendering of Italian Renaissance, frowning down upon the thousands of travellers from the north and east, as they emerge into the lower section of the city from the Fourth Avenue tunnel. Of all the innumerable examples of this common style of the use of iron in street fronts, it is the worst, because it is the largest and the most pretentious. It is well built, well furnished, substantial, and in its purpose and intent of providing an eating and sleeping place for a thousand working-women, should in all material aspects serve admirably; but artistically it is a magnificent failure, a two-million-dollar example of what New York does not want if she is ever to show a decent architectural face along her principal thoroughfares. The recent opening of the building to the uses which its founder had in view calls public attention to it, and makes it worth while to give a general description of it.

It is situated on Fourth Avenue, with a frontage of 196 feet 6 inches, and runs back on Thirty-second and Thirty-third Streets respectively 205 feet, covering a total area of over 40,000 square feet. It is six stories high with an additional mansard story, and along the front for a width of 100 feet the mansard is raised a story, making in this portion an eight-storied building above the curb. Nothing is seen exteriorly but iron, glass, and slate. The height from sidewalk to the main cornice (six stories) is 90 feet. The mansard adds 12 feet, while over the central portion of the front the external height to the mansard curb moulding is 109 feet. The main entrance is on Fourth Avenue, and is 48 feet in width, and is emphasized by a two-storied portico, with clustered iron columns; and an attempt at lightness has been made in this feature, which only makes it the more out of keeping with the heavy mass to which it is attached. The block plan shows an inner court 94 x 116 feet, at the centre of which a fountain with basin 18 feet in diameter will be placed. In addition to this, several ventilating shafts 8 x 10 feet are provided. The vestibule within the grand entrance is very roomy, and leads to a hall 30 feet wide, from which the main staircase rises with double flights, and between them runs the largest elevator: there will also be two other passenger-elevators, with a pair of freight-lifts at the rear end of the building. The first story, 19 feet 6 inches in the clear, will be fitted up as stores; of these there will be twenty-four, each 52 x 17 feet. The basement floor is 14 feet below the sidewalk, and will be given up entirely to the engines and furnaces. Vaults for coal extend below the sidewalks on the

three sides of the hotel, while a dozen or more boilers will furnish the steam for heating the entire interior, for driving the elevator engines, for furnishing power to kitchen and laundry, and for working the ventilating fans, as well as pumping water to the two great water-tanks each of 13,000 gallons capacity, situated in the mansard story. From these tanks the entire water supply for the upper part of the building will be drawn. In the rear of the first floor, the laundry and kitchen are arranged; and if report be true some wonderful quantities of provender are to come from the regions of the *chef*. Some idea may be formed of the scale of preparation when for griddle-cakes alone an iron griddle 7 x 13 feet and one inch thick has been set. This expansion of the kitchen facilities is because of a plan of giving out lunches and ready-cooked dinners to girls and others not living as guests in the hotel; and for this a room 50 x 20 feet on the ground floor at the Thirty-second Street flank will be used. When in full working order it is calculated that daily meals may be furnished to 4,000 people. The second story of the building is 16 feet high, and will be given up to the common uses of the hotel occupants. Here will be the dining-hall, the grand parlor, the library and reading-room, and the concert or assembly room, each 55 x 100 feet. 600 guests may sit down to dine at the same time; and in the fitting up of the other apartments the utmost care has been taken to have the surroundings and furnishing on a scale of elegance and cost commensurate with the size of the whole. These rooms with the other private parlors and rooms on this floor look into the inner court, and open as well upon the outer streets. The passages and halls of the first and second floors will be tiled in marble, but the rooms proper will be carpeted; and over 15,000 yards of Axminster, Wilton, and Brussels have been used in the several rooms throughout the building. The third, fourth, fifth, sixth, and seventh floors are cut up for the uses of the lodgers. There are 502 private rooms; of these 115 are double rooms, each 16 x 18 feet area, while the 387 single rooms are of half this size. All are furnished in good style, and each room has hot and cold water-taps, gas, and electric bell communication with the office. Bath-rooms and water-closets are provided in abundance. In all respects the building represents the best material, put together with the best workmanship. The building is technically fire-proof; that is, it has heavy brick bearing walls, iron beams, filled in with brick arching and overlaid with cement bedding for tile or hard-wood flooring. The partition walls are built with iron studding, iron laths, and plaster. The bald cold look of the interior is relieved as far as possible by a judicious use of works of art, and the arrangements will compare more than favorably with the best hotels in the country. Altogether the pile is a magnificent monument. If the plan of gathering together a thousand irresponsible young women into a single home shall meet permanent success, the Stewart Home will be a blessing.

MR. RUSKIN'S APHORISMS ON DRAWING.

MR. RUSKIN has at length published the first part of his new book on art, under the title of "The Laws of Fiesole: a familiar treatise on the Elementary Principles and Practice of Drawing and Painting, as determined by the Tuscan Masters." It contains the following series of general aphorisms, which Mr. Ruskin wrote for a young Italian painter, as containing what was likely to be most useful to him, in briefest form: —

I. — The greatest art represents every thing with absolute sincerity, as far as it is able. But it chooses the best things to represent, and it places them in the best order in which they can be seen. You can only judge of what is *best*, in process of time, by the bettering of your own character. What is *true*, you can learn now, if you will.

II. — Make your studies always of the real size of things. A man is to be drawn the size of a man, and a cherry the size of a cherry. "But I cannot draw an elephant his real size." There is no occasion for you to draw an elephant. "But nobody can draw Mont Blanc his real size." No; therefore nobody can draw Mont Blanc at all, but only a distant view of Mont Blanc. You may also draw a distant view of a man, and of an elephant, if you like; but you must take care that it is seen to be so, and not mistaken for a drawing of a pigmy, or a mouse near. "But there is a great deal of good miniature-painting." Yes, and a great deal of fine cameo-cutting. But I am going to teach you to be a painter, not a locket-decorator or medallist.

III. — Direct all your first efforts to acquire the power of drawing an absolutely accurate outline of any object of its real size as it appears at a distance of not less than twelve feet from the eye. All greatest art represents objects at not less than this distance, because you cannot see the full stature and action of a man if you go nearer him. The difference between the appearance of any thing — say a bird, fruit, or leaf — at a distance of twelve feet or more, and its appearance looked at closely, is the first difference also between Titian's painting of it, and a Dutchman's.

IV. — Do not think, by learning the nature or structure of a thing, that you can learn to draw it. Anatomy is necessary in the education of surgeons; botany in that of apothecaries; and geology in that of miners. But none of the three will enable you to draw a man, a flower, or a mountain. You can learn to do that only by looking at them, not by cutting them to pieces. And don't think you can paint a peach because you know there's a stone inside, nor a face because you know a skull is.

V. — Next to outlining things accurately, of their true form, you must learn to color them delicately, of their true color.

VI. — If you can match a color accurately, and lay it delicately, you are a painter; as, if you can strike a note surely, and deliver it clearly, you are a singer. You may then choose what you will paint, or what you will sing.

VII. — A pea is green, a cherry red, and a blackberry black, all round.

VIII. — Every light is a shade, compared to higher lights, till you come to the sun; and every shade is a light, compared to deeper shades, till you come to the night. When, therefore, you have outlined any space, you have no reason to ask whether it is in light or shade, but only of what color it is, and to what depth of that color.

IX. — You will be told that shadow is gray; but Correggio, when he has to shade with one color, takes red chalk.

X. — You will be told that blue is a retiring color, because distant mountains are blue. The sun setting behind them is nevertheless, farther off, and you must paint it with red or yellow.

XI. — "Please paint me my white cat," said little Imelda. "Child," answered the Bolognese professor, "in the grand school all cats are gray."

XII. — Fine weather is pleasant; but if your picture is beautiful, people will not ask whether the sun is out or in.

XIII. — When you speak to your friend in the street, you take him into the shade. When you wish to think you can speak to him in your picture, do the same.

XIV. — Be economical in every thing, but especially in candles. When it is time to light them, go to bed. But the worst waste of them is drawing by them.

XV. — Never, if you can help it, miss seeing the sunset and the dawn. And never, if you can help it, see any thing but dreams between them.

XVI. — "A fine picture, you say?" — "The finest possible: St. Jerome, and his lion, and his arm-chair. St. Jerome was painted by a saint, and the lion by a hunter, and the chair by an upholsterer."

My compliments. It must be very fine; but I do not care to see it.

XVII. — "Three pictures, you say? and by Carpaccio!" — "Yes, — St. Jerome, and his lion, and his arm-chair. Which will you see?" — "What does it matter? The one I can see soonest."

XVIII. — Great painters defeat Death — the vile adorn him, and adore.

XIX. — If the picture is beautiful, copy it as it is; if ugly, let it alone. Only Heaven and Death know what it *was*.

XX. — "The King has presented an Etruscan vase, the most beautiful in the world, to the Museum of Naples. What a pity I cannot draw it!"

In the mean time, the housemaid has broken a kitchen teacup; let me see if you can draw one of the pieces.

XXI. — When you would do your best, stop the moment you begin to feel difficulty. Your drawing will be the best you can do; but you will not be able to do another so good to-morrow.

XXII. — When you would do *better* than your best, put your full strength out the moment you feel a difficulty. You will spoil your drawing to-day; but you will do better than your to-day's best, to-morrow.

XXIII. — "The enemy is too strong for me to-day," said the wise young general. "I won't fight him; but I won't lose sight of him."

XXIV. — "I can do what I like with my colors now," said the proud young scholar. "So could I, at your age," answered the master; "but now I can only do what other people like." — *The Architect.*

THE WORD "OBELISK."

BOSTON, 19 Nov., 1877.

TO THE EDITOR OF THE AMERICAN ARCHITECT.

Dear Sir, — In your paper of the 3d inst. in a mention of Mr. I. C. Markham's design for a monument on the battle-field of Saratoga, you speak of it as "an octagonal obelisk," etc. Mr. Richardson, in his description of Trinity Church in this city, writes: "The composition took the outline of a pyramid, the apse, transepts, nave, and chapels forming only the base to the obelisk of the tower."

Surely, in both these instances, the term "obelisk" is misapplied; for what say the dictionaries? —

"A four-sided shaft of stone, tapering and truncated."

"A quadrangular pyramid, very slender and high."

SIGMA.

[Our use of the expression "octagonal obelisk" was by a metaphor which perhaps we should not have risked if we had expected to be brought to book. The characteristic that distinguishes an obelisk from a slender square pyramid is its ending at the top in a pyramid of lesser pitch. It is this peculiarity that most distinguishes Mr. Markham's design from a Gothic spire (a very good point in the design, too), while in its plan the square so predominates over the octagon that it really is an obelisk with all its edges chamfered except the horizontal ones. — EDS. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS.

WATER-TANKS IN FACTORIES. — Hereafter the Superintendent of Buildings in New York will require all owners or occupants of buildings used for manufacturing purposes, to have on each floor above the first, a tank of five hundred gallons capacity, continually filled with water, and to attach to it the necessary appliances for extinguishing fires.

THE BLACKWELL'S ISLAND BRIDGE. — Fears have been entertained that the recent embarrassments of the Long Island Railroad would delay the building of the proposed bridge over the East River, at Blackwell's Island. R. M. Graham, secretary of the bridge directors, states that the work will not be delayed on account of these troubles. Herman Poppenhusen is the only member of his family interested in the bridge, and he owns about ten thousand dollars of stock. Mr. Graham says, however, that nothing will be done in connection with the bridge until there is a change in the board of directors.

HARTFORD DECORATIVE ART SOCIETY. — The committees of the Decorative Art Society of Hartford have had their first meeting for this fall. Various ways of promoting the interests of the society were discussed, chief among which was a plan for securing thorough instruction in elemental drawing at a moderate price, so that any one desirous to lay a good foundation for future work could obtain this most necessary preparation. The matter has been placed in the hands of two of the committee, who are to report upon ways and means. A prize of $25 has been offered by the parent society in New York for a design for "painted decoration of a door," to be sent in before Dec. 1, 1877. No specifications have been given, and any style of decoration can evidently be sent in. All necessary information will be furnished by the secretary of the society.

THE WATER SUPPLY OF NEW YORK. — William Burdon, of Brooklyn, has sent a long communication to the Chairman of the Special Committee on Water Supply for the City of New York, in which he states, that by means of a close canal or conduit, beginning at the Harlem River, running through Westchester County, following the lowlands and keeping the depth below the well level, a supply sufficient for the future use of the city can be obtained. He says the canal would always be full of pure water, supplied from the great underground basin of Westchester, as it would intercept in its course all the springs and streams. He proposes to have one main conduit, beginning at a point west of King's Bridge, or east of Central Bridge, on the Westchester side of the Harlem River, running up through Westchester, with lateral branches right or left, as the nature of the ground may dictate, smaller ones to be built in each of the valleys, and a cross tunnel made to intercept them all, — the conduits to be extended according to the growth of the city. Mr. Burdon claims that with pumping wells on the New York side, connecting with a tunnel under the Harlem River, sufficient force would be gained to carry water to the upper floors of houses on Murray Hill. The cost of the works he estimates at $9,500,000, exclusive of the right way. He says the expense of pumping will not compare with that of building costly reservoirs on high elevations; and even if it did, the sanitary advantages would more than compensate.

THE METRICAL SYSTEM IN THE POST OFFICES AND NAVY. — The Postmaster-General, in reply to the House, says that the objections to making a metrical system of weights and measures obligatory throughout the postal services are two; viz., the expense incident to a change of systems, and second, apprehension that it may fail to give practical satisfaction, owing to a lack of knowledge of the system and experience in its use by many postmasters and by the public. He suggests that if Congress decides to extend the system to the entire postal service, an adequate appropriation should be made to supply all the post-offices with suitable scales and balances, and that six months be allowed before requiring its obligatory use. Twelve months would be ample time to obtain the supply; and in eighteen months after the appropriation is made, the new system could go into operation. The Secretary of the Navy sees no objection to the metrical system in the navy, except if applied to soundings given in charts, it would probably involve a total loss of all the charts and chart-plates now in use, and would be prejudicial to an exchange of charts with England.

RECLAIMING A LARGE SWAMP. — Bliss Sutherland, of Kankakee, Ill., is engaged in digging a ditch seven and a half miles long, from an eight-thousand-acre tract of swamp land in Newton County, Ind., belonging to Gaff, the Cincinnati brewer, to the Iroquois River, in the north-eastern part of Kankakee County, Ill. The ditch will be eighteen feet wide at the bottom, thirty feet wide at the top, and will be four feet deep. At one point in its course, where it intersects a sand-ridge one thousand feet wide, the ditch will be eight feet deep. Six miles of the distance is traversed after leaving Mr. Gaff's land. Besides this immense outlet, there will be thirty miles of ditching done on the eight thousand acres. The work will keep fifty to a hundred men employed all next season, and the cost will be over $30,000. At a cost of $4 per acre the land can be made worth $30, where it is now worth $2 or $3.

BRONZING IRON. — A bronze for iron is described in the *Deutsche Industrie Zeitung*. The articles to be bronzed are heated in the air after being coated with linseed oil. Objects which cannot be exposed to a high temperature may be steeped in a slightly acid solution of ferric chloride plunged into hot water, and when dry, rubbed with linseed oil or wax. The iron is then steeped in a solution of sulphate of copper for a few moments, and afterward transferred to a solution of hyposulphite of soda, acidulated with hydrochloric acid. The result is a blue-black coating, not affected by air or water.

BRIDGING THE FIRTH OF FORTH. — Encouraged by the successful completion of the Tay bridge, the authorities have decided to at once take steps to carry a bridge across the Firth of Forth.

THE NEW STATUE OF PRAXITELES. — The following from the London *Athenæum* is a statement of the discovery of a very important work of ancient Greek art. In the second week of May, 1877, there was found in the Olympia temple of Zeus, not far from a portrait statue of a Roman lady, a colossal marble statue of a nude youth. The lower portion of the legs and the right fore-arm are wanting. With the left elbow he leaned upon the stem of a tree, supporting on his arm a little boy. Of the latter figure, unfortunately only the lower part remains, and the tiny hand that he had laid confidingly on the shoulder of his bearer. Over the tree stem on which the arm that supports the boy is rested, falls the drapery in rich, deeply-cut and wonderfully worked folds, affording to the arm a soft resting-place, and gracefully hiding the support of the tree stem, which in this position was technically necessary. The body of the youth rests with an easy negligence on the left leg, so that the soft flesh of the right hip shows in manifold displacements the play of the muscles of the blooming youthful form. The head is marked by the finest, most spiritualized youthful beauty, and somewhat resembles the heads we see on the Vatican Meleager, or the Hermes of the Belvedere. The body, too, resembles those figures, only it is slenderer, softer, more vivacious. At the first glance, we are struck by the careless execution of the hair, which, in the parts that were usually unseen by the spectators, is only slightly indicated. The back of the statue is also less thoroughly wrought. Now Pausanias reports that among the gifts of a recent date was a marble Hermes carrying the boy Dionysus, and that it was a work of Praxiteles. The savants who have charge of the excavations have therefore, and there is no doubt correctly, inferred that our statue is really the Hermes of Praxiteles, and that we now, for the first time, behold an original work of that great artist, — a work that is equal to the greatest treasures we possess of ancient art, and which must ever remain a corner-stone of our knowledge of the history of Greek sculpture.

DISCOVERY OF AN ANCIENT CITY IN COLORADO. — A Colorado correspondent of the Chicago *Times* reports that a gold-seeker who was exploring the San Miguel and Doloros valleys in search of gold last year, discovered on the west bank of the Doloros river the ruins of what had once evidently been a large city. Ancient ruins and fragments of pottery were scattered in every direction, and the foundation walls of some of the principal buildings were still standing in a good state of preservation. In the centre of the ruins and standing in a clear open space, were the remains of a temple which had evidently been devoted to the worship of the sun. The walls were of hewn stone, and so closely laid together that it was hard to detect a joint. The plaster on the walls inside was still bright and fresh looking. The temple measured 300 feet in length and 120 feet in width, and the walls were adorned with rough representations of men and animals, with no perspective, while over one of the windows was the rude figure of a dove bearing a twig or branch of some kind, and flying toward a mountain in the distance. The explorer found the ground covered for acres with cut stones and broken crockery-ware, and houses and walls of solid masonry, showing marks of skilful workmanship, having withstood the ravages of time for unnumbered centuries. A wall fifty feet thick, apparently several miles in circumference, was visible in many places. In places houses were found completely covered in the earth. In one of these houses the explorer found an opening, and by means of a rope let himself down into what he considered the upper story of a building of enormous size. There were at least a dozen different apartments, some of them very large. The floor was of solid cedar logs, hewed and fitted close together.

ROMAN AMPHITHEATRE. — A Roman amphitheatre has been unearthed at Ventimiglia, near Nice.

THE DUOMO AT FLORENCE. — The façade of the Duomo at Florence, so long left unfinished, is at length likely to be completed, and the Pope has duly blessed the designs. His Holiness has given a beautiful mosaic of Raphael's "Madonna di Foligno" (now in the Vatican), to be placed in the Duomo.

COAL-DAMP. — The recent explosion at the colliery at High Blantyre, Scotland, has directed attention to the increasing danger from fire-damp in old pits. It has been suggested that some means should be devised for indicating at the mouth of a pit the condition of the air in any part of the workings. Fire-damp consists of three-fourths of carburetted hydrogen and of one-fourth of other gases. Three parts of fire-damp to one of air is not explosive; but it is liable to produce drowsiness in the miners, or even suffocation, and to cause the flame of a lamp to burn dimly or to die out for want of oxygen. When the fire-damp is diluted with fifteen to twenty times its volume of atmospheric air, the flame of a lamp burned in the mixture is very large and surrounded with a blue envelope. But if there are eight parts of air to one part of fire-damp, the introduction of a light will instantly produce a terrific explosion. It is not fire-damp alone which has caused so many terrible disasters in mines, but its mixture in a certain proportion with atmospheric air. As a means of indicating the condition of the air in any portion of the headings to those above ground, it would appear, therefore, that some combination of a barometer and an electric apparatus might prove of advantage. — *New York Times.*

THE AREA OF LIGHTNING-CONDUCTORS. — Professor Colladon insists that most of the metallic wires used as lightning-conductors on buildings are by far too slender. He says that they should be at least five hundred square millimètres in section, otherwise they are more likely to do harm than good.